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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,515	03/28/2001	Daniel J. Ragland	42390P11079	6096

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EXAMINER

THAI, XUAN MARIAN

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 05/05/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/821,515

Applicant(s)

RAGLAND, DANIEL J.

Examiner

XUAN M. THAI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-28 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. This is in response to amendment filed on February 20, 2004. Claims 1, 6, 12, 13 and 21 have been amended. Claims 1-28 remain pending in the application.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Aguilar et al. (USPN 6,199,137; Aguilar).

As per claim 1, Aguilar discloses the claimed invention including a circuit comprising: a plurality of switches (e.g. port switches 440) coupled to a plurality of registers (col. 4, lines 29-36), the plurality of registers to control the plurality of switches (col. 4, lines 29-36); wherein the plurality of switches are dynamically switched (col. 4, lines 4-16) to route a plurality of USB ports based on a USB device bandwidth balancing process to maximize USB device bandwidth (col. 2, lines 61-62; col. 4, lines 4-45).

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4. Claims 1-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Sauber (USPN 6,256,700).

As per claim 1, Sauber discloses the claimed invention including a circuit comprising: a plurality of switches (e.g. switch system 46) coupled to a plurality of registers (GPIO 48), the plurality of registers to control the plurality of switches (col. 4, lines 46-52); wherein the plurality of switches are dynamically switched to route a plurality of USB ports based on a USB device bandwidth balancing process to maximize USB device bandwidth (cols. 5-6; figs. 4-6b).

As per claim 2, Sauber discloses USB device class (col. 5, line 60).

As per claim 3, Sauber discloses USB device descriptor (col. 5, lines 60-67).

As per claim 4, Sauber discloses USB device use information and bandwidth consumption information (col. 5, lines 62 and 65-67).

As per claim 5, Sauber discloses dynamic routing of USB signals through the switches (e.g. col. 5, lines 19-55).

As per claim 6, Sauber discloses a system (fig. 1) comprising: a processor 12; a memory 18; a north bridge (e.g. memory interface) coupled to a bus (PCI) and the processor 12; a south bridge (e.g. I/O interface) coupled to the bus (PCI); and a universal serial bus bandwidth load balancing circuit (e.g. switch system 46), wherein the USB bandwidth load balancing circuit dynamically distributes a plurality of USB ports based on a USB device bandwidth balancing process to maximize USB device bandwidth (cols. 5-6; figs. 4-6b).

As per claim 7, Sauber discloses wherein the USB bandwidth load balancing circuit comprises: a plurality of switches (switches S0-Sn; col. 5, lines 19-20), wherein the plurality of

switches are coupled to a plurality of USB ports (28a-28d) based on a USB device bandwidth (col. 5, lines 1-61).

As per claim 8, Sauber discloses USB device class (col. 5, line 60).

As per claim 9, Sauber discloses USB device descriptor (col. 5, lines 60-67).

As per claim 10, Sauber discloses USB device use information and bandwidth consumption information (col. 5, lines 62 and 65-67).

As per claim 11, Sauber discloses dynamic routing of USB signals through the switches (e.g. col. 5, lines 19-55).

As per claims 12, 13 and 21, Sauber discloses a method comprising: determining allocation of a plurality of USB root hubs (plural controllers 42 and 44); switching a plurality of root hub device assignments dynamically to distribute a plurality of USB ports based on a USB device bandwidth balancing process to maximize USB device bandwidth (see cols. 5-6; figs. 4-6b).

As per claims 14 and 22, Sauber discloses reading a USB descriptor (col. 5, lines 60-67); and writing a plurality root hub information to a plurality of registers (e.g. Tables 1 and 2).

As per claims 15 and 23, Sauber discloses a plurality of switches (S0-Sn) and registers to control the switches (col. 4, lines 40-67).

As per claims 16 and 24, Sauber discloses determining an attached device's class (col. 5, line 60); distinguishing USB device classes (col. 6, lines 1-5, 12-30); allowing at least two low bandwidth USB class devices to couple to the same root hub (col. 6, lines 48-52); allowing at least one low bandwidth class device and at least one high bandwidth class device to couple to

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the same root hub (col. 6, lines 12-52); preventing a first high bandwidth class device and a second high bandwidth class device to couple to the same root hub (col. 6, lines 48-52).

As per claims 17 and 25, Sauber discloses USB device descriptor (col. 5, lines 60-67).

As per claims 18 and 26, Sauber discloses dynamic switching of root hub device assignments (e.g. col. 5, lines 19-55).

As per claims 19 and 27, Sauber discloses USB device use information and bandwidth consumption information (col. 5, lines 62 and 65-67).

As per claims 20 and 28, Sauber discloses dynamic switching of root hub device assignments (e.g. col. 5, lines 19-55).

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

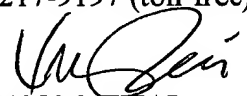
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to XUAN M. THAI whose telephone number is 703-308-2064. The examiner can normally be reached on Monday to Friday from 8:30 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
XUAN M. THAI  
Primary Examiner  
Art Unit 2111

XMT